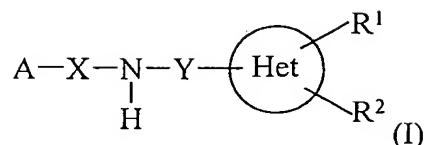


## CLAIMS

- 5    1. Compounds of general formula (I)



in racemic, enantiomeric, diastereoisomeric form or all combinations of these forms, in which

$\text{R}^1$  represents a hydrogen atom, an  $-\text{OR}^3$ ,  $-\text{SR}^3$ , oxo or cyclic acetal radical,

- 10    in which  $\text{R}^3$  represents a hydrogen atom, an alkyl, arylalkyl, heterocycloalkylcarbonyl, alkylcarbonyl, arylcarbonyl or aralkylcarbonyl radical,

in which the alkyl, aryl or heterocycloalkyl radicals are optionally substituted by one or more identical or different substituents chosen from: alkyl, OH, alkoxy, nitro, cyano, halogen or  $-\text{NR}^4\text{R}^5$

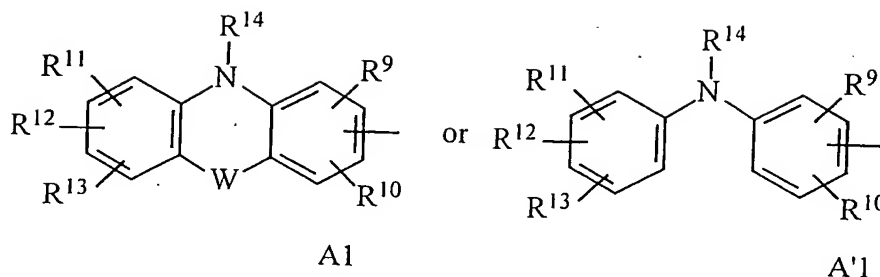
- 15     $\text{R}^4$  and  $\text{R}^5$  represent, independently, a hydrogen atom or an alkyl radical, or  $\text{R}^4$  and  $\text{R}^5$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

- $\text{R}^2$  represents a hydrogen atom, an alkyl, aryl or aralkyl radical, the aryl group being optionally substituted by one or more identical or different radicals chosen from:  $-\text{OR}^6$ ,  
20     $-\text{NR}^7\text{R}^8$ , halogen, cyano, nitro or alkyl,

in which  $\text{R}^6$ ,  $\text{R}^7$  and  $\text{R}^8$  represent, independently, a hydrogen atom, an alkyl, aryl, aralkyl, alkylcarbonyl, arylcarbonyl or aralkylcarbonyl radical

A represents

either an A1 or A'1 radical



in which  $R^9$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$  represent, independently, a hydrogen atom, a halogen, the OH group, an alkyl, alkoxy, cyano, nitro or  $-NR^{15}R^{16}$  radical,

$R^{15}$  and  $R^{16}$  represent, independently, a hydrogen atom, an alkyl radical or a  $-COR^{17}$  group, or  $R^{15}$  and  $R^{16}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

$R^{17}$  represents a hydrogen atom, an alkyl, alkoxy or  $-NR^{18}R^{19}$  radical,

$R^{18}$  and  $R^{19}$  represent, independently, a hydrogen atom or an alkyl radical, or  $R^{18}$  and  $R^{19}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

$R^{14}$  represents a hydrogen atom, an alkyl radical or a  $-COR^{20}$  group,

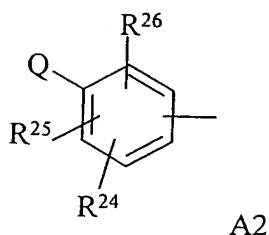
$R^{20}$  represents a hydrogen atom, an alkyl, alkoxy, aryl, aralkyl, heterocycloalkyl or  $-NR^{21}R^{22}$  radical,

in which the alkyl, aryl or heterocycloalkyl radicals are optionally substituted by one or more identical or different substituents chosen from: alkyl, OH, alkoxy, nitro, cyano, halogen or  $-NR^4R^5$ :

$R^{21}$  and  $R^{22}$  represent, independently, a hydrogen atom or an alkyl radical, or  $R^{21}$  and  $R^{22}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

W represents a bond, O or S or also an  $-NR^{23}$  radical, in which  $R^{23}$  represents a hydrogen atom or an alkyl radical;

or an A2 radical



in which

$R^{24}$ ,  $R^{25}$  and  $R^{26}$  represent, independently, a hydrogen, a halogen, the OH or  $SR^{27}$  group, an alkyl, alkenyl, alkoxy radical or an  $-NR^{28}R^{29}$  radical,

5  $R^{27}$  represents a hydrogen atom or an alkyl radical,

$R^{28}$  and  $R^{29}$  represent, independently, a hydrogen atom, an alkyl radical or a  $-COR^{30}$  group, or  $R^{28}$  and  $R^{29}$  form together with the nitrogen atom to which they are attached an optionally substituted heterocycle,

$R^{30}$  represents a hydrogen atom, an alkyl, alkoxy or  $-NR^{31}R^{32}$  radical,

10  $R^{31}$  and  $R^{32}$  represent, independently, a hydrogen atom or an alkyl radical, or  $R^{31}$  and  $R^{32}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

15 Q represents  $-OR^{33}$ ,  $-SR^{33}$ ,  $-NR^{34}R^{35}$  or an aryl radical substituted by one or more identical or different substituents chosen from: halogen, the OH group, an alkyl, alkoxy, cyano, nitro or  $-NR^{15}R^{16}$  radical,

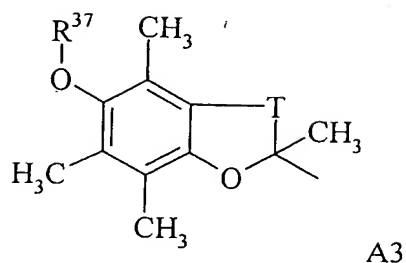
$R^{33}$  represents a hydrogen atom, an alkyl, arylalkyl, heterocycloalkylcarbonyl, alkylcarbonyl, arylcarbonyl or aralkylcarbonyl radical,

20 in which the alkyl, aryl or heterocycloalkyl radicals are optionally substituted by one or more identical or different substituents chosen from: alkyl, OH, alkoxy, nitro, cyano, halogen or  $-NR^4R^5$ .

$R^{34}$  and  $R^{35}$  represent, independently, a hydrogen atom, an alkyl radical or a  $-CO-R^{36}$  radical, or together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

$R^{36}$  representing an alkyl radical;

or an A3 radical

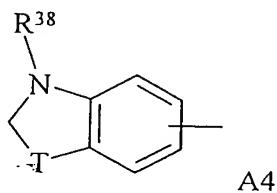


in which  $R^{37}$  represents a hydrogen atom, an alkyl, arylalkyl, heterocycloalkylcarbonyl, alkylcarbonyl, arylcarbonyl or aralkylcarbonyl radical;

5 in which the alkyl, aryl or heterocycloalkyl radicals are optionally substituted by one or more identical or different substituents chosen from: alkyl, OH, alkoxy, nitro, cyano, halogen or  $-NR^4R^5$ ;

T represents a  $-(CH_2)_m-$  radical with  $m = 1$  or  $2$ ;

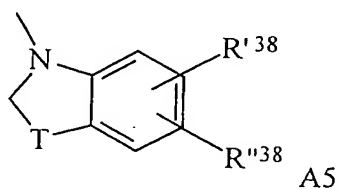
or an A4 radical



10 in which  $R^{38}$  represents a hydrogen atom, an alkyl,  $-(CH_2)_q-NR^{39}R^{40}$  or aralkyl radical, the aryl group being optionally substituted by one or more identical or different substituents chosen from: OH, alkyl, halogen, nitro, alkoxy or  $-NR^{39}R^{40}$ ,

q being an integer comprised between 2 and 6;

15 or an A5 radical



in which  $R^{38}$  and  $R^{39}$  represent independently a hydrogen atom, nitro,  $-NR^{39}R^{40}$ , an alkyl or arylalkyl radical, the aryl group being optionally substituted by one or more identical or different substituents chosen from: OH, the alkyl, halogen, nitro, alkoxy or  $-NR^{39}R^{40}$  radicals,

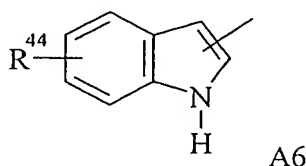
5  $R^{39}$ ,  $R^{40}$ ,  $R^{39}$  and  $R^{40}$  represent, independently, a hydrogen atom, an alkyl radical or a  $-COR^{41}$  group, or  $R^{39}$  and  $R^{40}$  or  $R^{39}$  and  $R^{40}$  together with the nitrogen atom form an optionally substituted heterocycle,

$R^{41}$  represents a hydrogen atom, an alkyl, alkoxy or  $-NR^{42}R^{43}$  radical,

10  $R^{42}$  and  $R^{43}$  represent, independently, a hydrogen atom or an alkyl radical, or  $R^{42}$  and  $R^{43}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

T representing a  $-(CH_2)_m-$  radical with  $m = 1$  or  $2$ ,

or finally an A6 radical



15 in which  $R^{44}$  represents a hydrogen atom, the OH group or an alkyl or alkoxy radical;

X represents  $-(CH_2)_n-$ ,  $-(CH_2)_n-CO-$ ,  $-N(R^{45})-CO-(CH_2)_n-CO-$ ,  $-N(R^{45})-CO-D-CO-$ ,  $-CO-N(R^{45})-D-CO-$ ,  $-CO-D-CO-$ ,  $-CH=CH-(CH_2)_n-CO-$ ,  $-N(R^{45})-(CH_2)_n-CO-$ ,  $-N(R^{45})-CO-C(R^{46}R^{47})-CO-$ ,  $-O-(CH_2)_n-CO-$ ,  $-N(R^{45})-CO-NH-C(R^{46}R^{47})-CO-$ ,  
20  $-CO-N(R^{45})-C(R^{46}R^{47})-CO-$ ,  $-S-(CH_2)_n-CO-$  or  $-Z-CO-$ ;

D represents a phenylene radical optionally substituted by one or more identical or different radicals chosen from alkyl, alkoxy, OH, nitro, halogen, cyano, or carboxyl optionally esterified by an alkyl radical;

Z represents a heterocycle,

R<sup>45</sup> represents a hydrogen atom or an alkyl radical,

5 R<sup>46</sup> and R<sup>47</sup> represent, independently, a hydrogen atom, an alkyl, aryl or aralkyl radical the alkyl and aryl groups of which are optionally substituted by one or more identical or different substituents chosen from: the OH, -SH, halogen, nitro, alkyl, alkoxy, alkylthio, aralkoxy, aryl-alkylthio, -NR<sup>48</sup>R<sup>49</sup> and carboxyl group optionally esterified by an alkyl radical;

10 R<sup>48</sup> and R<sup>49</sup> represent, independently, a hydrogen atom, an alkyl radical or a -COR<sup>50</sup> group, or R<sup>48</sup> and R<sup>49</sup> together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

R<sup>50</sup> represents a hydrogen atom, an alkyl, alkoxy or -NR<sup>51</sup>R<sup>52</sup> radical,

R<sup>51</sup> and R<sup>52</sup> represent, independently, a hydrogen atom or an alkyl radical, or R<sup>51</sup> and R<sup>52</sup> together with the nitrogen atom to which they are attached, form an optionally substituted heterocycle;

15 n being an integer comprised between 0 and 6;

Y represents -(CH<sub>2</sub>)<sub>p</sub>-, -C(R<sup>53</sup>R<sup>54</sup>)-(CH<sub>2</sub>)<sub>p</sub>-, -C(R<sup>53</sup>R<sup>54</sup>)-CO-;

20 R<sup>53</sup> and R<sup>54</sup> represent, independently, a hydrogen atom, an alkyl radical, an aralkyl radical the aryl group of which is optionally substituted by one or more identical or different substituents chosen from: the OH, halogen, nitro, alkyl, alkoxy, -NR<sup>55</sup>R<sup>56</sup> group,

R<sup>55</sup> and R<sup>56</sup> represent, independently, a hydrogen atom, an alkyl radical or a -COR<sup>57</sup> group, or R<sup>55</sup> and R<sup>56</sup> together with the nitrogen atom to which they are attached, form an optionally substituted heterocycle,

R<sup>57</sup> represents a hydrogen atom, an alkyl, alkoxy or -NR<sup>58</sup>R<sup>59</sup> radical,

R<sup>58</sup> and R<sup>59</sup> represent, independently, a hydrogen atom or an alkyl radical, or R<sup>58</sup> and R<sup>59</sup> together with the nitrogen atom to which they are attached form an optionally substituted heterocycle;

p being an integer comprised between 0 and 6;

5 Het represents a heterocycle,

as well as the addition salts with mineral and organic acids or with mineral and organic bases of said compounds of general formula (I),

with the exception of the compounds of formula (I) in which when Het represents tetrahydrofuran or tetrahydropyran, R<sup>1</sup> represents the OR<sup>3</sup> radical with R<sup>3</sup> representing a  
10 hydrogen atom, an alkyl, arylalkyl, heterocycloalkylcarbonyl radical the heterocycloalkyl radical of which is connected by a carbon atom, alkylcarbonyl, arylcarbonyl or aralkylcarbonyl radical, R<sup>2</sup> represents a hydrogen and Y represents the -(CH<sub>2</sub>)<sub>p</sub>- radical with p = 0, then X does not represent -CO-N(R<sup>45</sup>)-C(R<sup>46</sup>R<sup>47</sup>)-CO- with R<sup>45</sup> = R<sup>46</sup> = H.

2. Compounds according to claim 1, characterized in that Het represents a monocyclic  
15 radical containing 1 to 2 heteroatoms chosen from O and N.

3. Compounds according to one of claims 1 to 2, characterized in that Het represents tetrahydrofuran, dioxolane, pyrrolidine, 1,3-oxazolidine, and R<sup>1</sup> represents the hydrogen atom, the -OR<sup>3</sup> or oxo radical.

4. Compounds according to one of the previous claims, characterized in that X represents  
20 -(CH<sub>2</sub>)<sub>n</sub>-, -(CH<sub>2</sub>)<sub>n</sub>-CO-, -O-(CH<sub>2</sub>)<sub>n</sub>-CO-, -CO-N(R<sup>45</sup>)-D-CO-, -N(R<sup>45</sup>)-CO-(CH<sub>2</sub>)<sub>n</sub>-CO-, -N(R<sup>45</sup>)-CO-C(R<sup>46</sup>R<sup>47</sup>)-CO-, -N(R<sup>45</sup>)-CO-NH-C(R<sup>46</sup>R<sup>47</sup>)-CO-, -N(R<sup>45</sup>)-(CH<sub>2</sub>)<sub>n</sub>-CO-, -CO-N(R<sup>45</sup>)-C(R<sup>46</sup>R<sup>47</sup>)-CO or -Z-CO-.

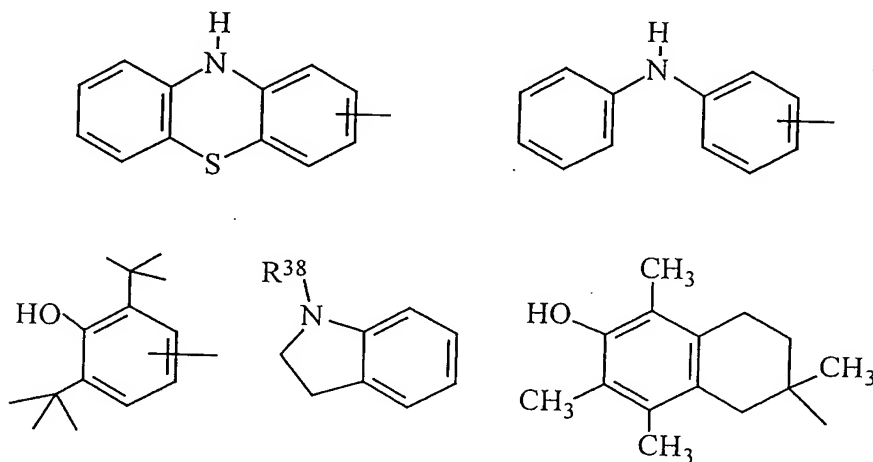
5. Compounds according to claim 4, characterized in that R<sup>45</sup> and R<sup>47</sup> represent the hydrogen atom, R<sup>46</sup> represents the hydrogen atom, an alkyl or phenyl radical, D  
25 represents the phenylene radical and Z represents the thiazole radical.

6. Compounds according to one of the previous claims, characterized in that R<sup>2</sup> represents a hydrogen atom or an aralkyl radical, and preferably benzyl.

7. Compounds according to one of the previous claims, characterized in that A represents either A1 with W representing the sulphur atom; or A'1; or A2 with R<sup>24</sup>, R<sup>25</sup> and R<sup>26</sup>  
30 which represent, independently, a hydrogen or an alkyl radical and Q which represents

-OR<sup>33</sup>; or A3 with T representing the -(CH<sub>2</sub>)<sub>2</sub>- radical; or A4 with T representing the -(CH<sub>2</sub>)- radical,

8. Compounds according to one of the previous claims, characterized in that A represents a radical chosen from



5 9. Compounds corresponding to one of the following formulae:

(2*R*)-6-hydroxy-*N*-[(3*S*)-2-hydroxytetrahydro-3-furanyl]-2,5,7,8-tetramethyl-3,4-dihydro-2*H*-chromene-2-carboxamide;

*N*-1-(4-anilinophenyl)-*N*-4-[(3*S*)-2-hydroxytetrahydro-3-furanyl] succinamide;

(3*S*)-3-{[4-(4-anilinoanilino)-4-oxobutanoyl]amino} tetrahydro-2-furanyl acetate;

10 *N*-1-(4-anilinophenyl)-*N*-4-[(1*S*)-1-(1,3-dioxolan-2-yl)-3-methylbutyl] succinamide;

*N*-1-(4-anilinophenyl)-*N*-3-[(3*S*)-2-hydroxytetrahydro-3-furanyl]-2-phenylmalonamide;

3-(4-anilinoanilino)tetrahydro-2-furanol;

*N*-[(1*S*)-1-({[(3*S*)-2-hydroxytetrahydro-3-furanyl]amino}carbonyl)-3-methylbutyl]-10*H*-phenothiazine-2-carboxamide;

15 (3*S*)-3-({(2*S*)-4-methyl-2-[(10*H*-phenothiazin-2-yl)carbonyl]-amino}pentanoyl) amino)tetrahydro-2-furanyl acetate;

*N*-[(3*S*)-2-hydroxytetrahydro-3-furanyl]-2-(10*H*-phenothiazin-2-yl)-1,3-thiazol-4-carboxamide;



N-[4-({[(3S)-2-hydroxytetrahydro-3-furanyl]amino}carbonyl)phenyl]-10*H*-phenothiazine-2-carboxamide;

N-[(1S)-1-({[(3S)-2-hydroxytetrahydro-3-furanyl]amino}carbonyl)-3-methylbutyl]-10*H*-phenothiazine-1-carboxamide;

5 (3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl)amino]pentanoyl}amino)tetrahydro-2-furanyl pivalate;

(3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl)amino]pentanoyl}amino)-tetrahydro-2-furanyl 3,3-dimethylbutanoate;

10 (3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl)amino]pentanoyl}amino)tetrahydro-2-furanyl benzoate;

(3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl)amino]pentanoyl}amino)tetrahydro-2-furanyl phenylacetate;

(3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl)amino]pentanoyl}amino)tetrahydro-2-furanyl (2*S*)-2-(dimethylamino)-3-phenylpropanoate;

15 (3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl)amino]pentanoyl}amino)tetrahydro-2-furanyl 4-morpholinecarboxylate;

N-[(1S)-3-methyl-1-[(3-oxo-1-pyrrolidinyl)carbonyl]butyl]-10*H*-phenothiazine-2-carboxamide;

20 2-(3,5-di-*tert*-butyl-4-hydroxyphenoxy)-N-[(3S)-2-hydroxytetrahydro-3-furanyl]acetamide;

N<sup>1</sup>-[(3S)-2-hydroxytetrahydro-3-furanyl]-2-phenyl-N<sup>3</sup>-(1-propyl-2,3-dihydro-1*H*-indol-5-yl)malonamide;

N-(2-anilinophenyl)-N'-[(3S)-2-hydroxytetrahydro-3-furanyl]urea;

25 N<sup>1</sup>-[(3S)-2-hydroxytetrahydro-3-furanyl]-N<sup>2</sup>-(1-propyl-2,3-dihydro-1*H*-indol-5-yl)ethanediamide;

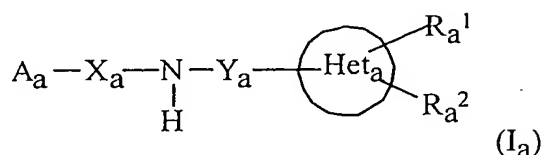
(2*R*)-N-[(1S)-1-(1,3-dioxolan-2-yl)-2-phenylethyl]-6-hydroxy-2,5,7,8-tetramethyl-3,4-dihydro-2*H*-chromene-2-carboxamide;

N-[(3S)-2-hydroxytetrahydro-3-furanyl]-5-indolinecarboxamide.

10. As medicaments, compounds according to one of claims 1 to 9.

11. Pharmaceutical compositions comprising, as active ingredient, at least one medicament as defined in claim 10.

12. Use of compounds of formula (I<sub>a</sub>) as defined above,



in racemic, enantiomeric, diastereoisomeric form or all combinations of these forms, in which

R<sub>a</sub><sup>1</sup> represents a hydrogen atom, an -OR<sup>3</sup>, -SR<sup>3</sup>, oxo or cyclic acetal radical,

in which R<sup>3</sup> represents a hydrogen atom, an alkyl, arylalkyl, heterocycloalkylcarbonyl, alkylcarbonyl, arylcarbonyl or aralkylcarbonyl radical,

in which the alkyl, aryl or heterocycloalkyl radicals are optionally substituted by one or more identical or different substituents chosen from: alkyl, OH, alkoxy, nitro, cyano, halogen or -NR<sup>4</sup>R<sup>5</sup>;

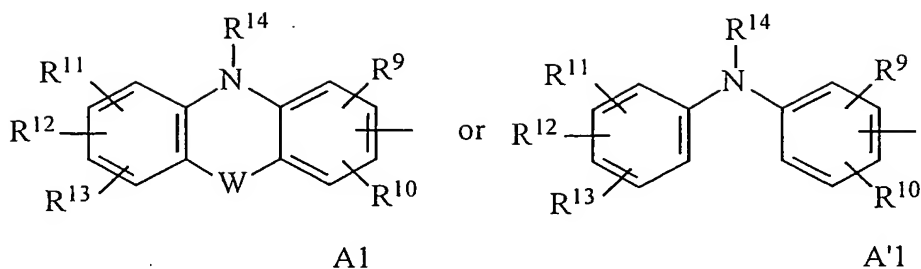
R<sup>4</sup> and R<sup>5</sup> represent, independently, a hydrogen atom or an alkyl radical, or R<sup>4</sup> and R<sup>5</sup> together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

R<sub>a</sub><sup>2</sup> represents a hydrogen atom, an alkyl, aryl or aralkyl radical, the aryl group being optionally substituted by one or more identical or different radicals chosen from: -OR<sup>6</sup>, -NR<sup>7</sup>R<sup>8</sup>, halogen, cyano, nitro or alkyl,

in which R<sup>6</sup>, R<sup>7</sup> and R<sup>8</sup> represent, independently, a hydrogen atom, an alkyl, aryl, aralkyl, alkylcarbonyl, arylcarbonyl or aralkylcarbonyl radical

A<sub>a</sub> represents

either an A1 or A'1 radical



in which R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup> represent, independently, a hydrogen atom, a halogen, the OH group, an alkyl, alkoxy, cyano, nitro or -NR<sup>15</sup>R<sup>16</sup> radical,

R<sup>15</sup> and R<sup>16</sup> represent, independently, a hydrogen atom, an alkyl radical or a -COR<sup>17</sup> group, or R<sup>15</sup> and R<sup>16</sup> together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

R<sup>17</sup> represents a hydrogen atom, an alkyl, alkoxy or -NR<sup>18</sup>R<sup>19</sup> radical,

R<sup>18</sup> and R<sup>19</sup> represent, independently, a hydrogen atom or an alkyl radical, or R<sup>18</sup> and R<sup>19</sup> together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

R<sup>14</sup> represents a hydrogen atom, an alkyl radical or a -COR<sup>20</sup> group,

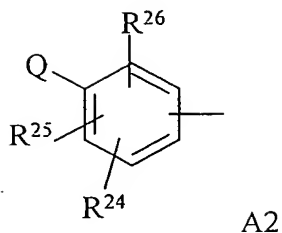
R<sup>20</sup> represents a hydrogen atom, an alkyl, alkoxy, aryl, aralkyl, heterocycloalkyl or -NR<sup>21</sup>R<sup>22</sup> radical.

in which the alkyl, aryl or heterocycloalkyl radicals are optionally substituted by one or more identical or different substituents chosen from: alkyl, OH, alkoxy, nitro, cyano, halogen or -NR<sup>4</sup>R<sup>5</sup>;

R<sup>21</sup> and R<sup>22</sup> represent, independently, a hydrogen atom or an alkyl radical, or R<sup>21</sup> and R<sup>22</sup> together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

W represents a bond, O or S or also an -NR<sup>23</sup> radical, in which R<sup>23</sup> represents a hydrogen atom or an alkyl radical;

or an A2 radical



in which

$R^{24}$ ,  $R^{25}$  and  $R^{26}$  represent, independently, a hydrogen, a halogen, the OH or  $SR^{27}$  group, an alkyl, alkenyl, alkoxy radical or an  $-NR^{28}R^{29}$  radical,

5  $R^{27}$  represents a hydrogen atom or an alkyl radical,

$R^{28}$  and  $R^{29}$  represent, independently, a hydrogen atom, an alkyl radical or a  $-COR^{30}$  group, or  $R^{28}$  and  $R^{29}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

$R^{30}$  represents a hydrogen atom, an alkyl, alkoxy or  $-NR^{31}R^{32}$  radical,

10  $R^{31}$  and  $R^{32}$  represent, independently, a hydrogen atom or an alkyl radical, or  $R^{31}$  and  $R^{32}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

15 Q represents  $-OR^{33}$ ,  $-SR^{33}$ ,  $-NR^{34}R^{35}$  or an aryl radical substituted by one or more identical or different substituents chosen from: halogen, the OH group, an alkyl, alkoxy, cyano, nitro or  $-NR^{15}R^{16}$  radical,

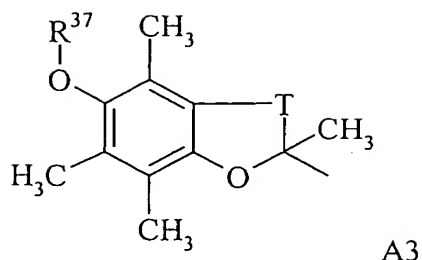
$R^{33}$  represents a hydrogen atom, an alkyl, arylalkyl, heterocycloalkylcarbonyl, alkylcarbonyl, arylcarbonyl or aralkylcarbonyl radical,

20 in which the alkyl, aryl or heterocycloalkyl radicals are optionally substituted by one or more identical or different substituents chosen from: alkyl, OH, alkoxy, nitro, cyano, halogen or  $-NR^4R^5$

$R^{34}$  and  $R^{35}$  represent, independently, a hydrogen atom, an alkyl radical or a  $-CO-R^{36}$  radical, or together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

$R^{36}$  representing an alkyl radical;

25 or an A3 radical

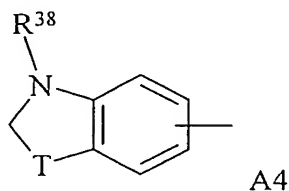


in which  $R^{37}$  represents a hydrogen atom, an alkyl, arylalkyl, heterocycloalkylcarbonyl, alkylcarbonyl, arylcarbonyl or aralkylcarbonyl radical,

5 in which the alkyl, aryl or heterocycloalkyl radicals are optionally substituted by one or more identical or different substituents chosen from: alkyl,  $\text{OH}$ , alkoxy, nitro, cyano, halogen or  $-\text{NR}^4\text{R}^5$ ;

T represents a  $-(\text{CH}_2)_m-$  radical with  $m = 1$  or  $2$ ;

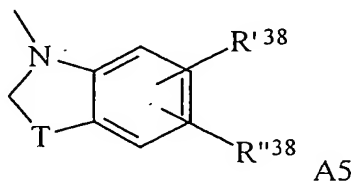
or an A4 radical



10 in which  $R^{38}$  represents a hydrogen atom, an alkyl,  $-(\text{CH}_2)_q-\text{NR}^{39}\text{R}^{40}$  or aralkyl radical, the aryl group being optionally substituted by one or more identical or different substituents chosen from:  $\text{OH}$ , alkyl, halogen, nitro, alkoxy or  $-\text{NR}^{39}\text{R}^{40}$ ,

q being an integer comprised between 2 and 6;

or an A5 radical



15 in which  $R'^{38}$  and  $R''^{38}$  represent independently a hydrogen atom, nitro,  $-\text{NR}^{39}\text{R}^{40}$ , an alkyl or arylalkyl radical, the aryl group being optionally substituted

by one or more identical or different substituents chosen from: OH, the alkyl, halogen, nitro, alkoxy or  $\text{-NR}^{39}\text{R}^{40}$  radicals,

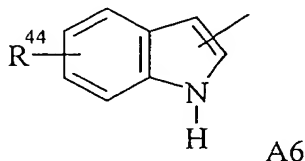
5  $\text{R}^{39}$ ,  $\text{R}^{40}$ ,  $\text{R}^{39}$  and  $\text{R}^{40}$  represent, independently, a hydrogen atom, an alkyl radical or a  $\text{-COR}^{41}$  group, or  $\text{R}^{39}$  and  $\text{R}^{40}$  or  $\text{R}^{39}$  and  $\text{R}^{40}$  together with the nitrogen atom form an optionally substituted heterocycle,

$\text{R}^{41}$  represents a hydrogen atom, an alkyl, alkoxy or  $\text{-NR}^{42}\text{R}^{43}$  radical,

$\text{R}^{42}$  and  $\text{R}^{43}$  represent, independently, a hydrogen atom or an alkyl radical, or  $\text{R}^{42}$  and  $\text{R}^{43}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

10 T representing a  $\text{-(CH}_2\text{)}_m\text{-}$  radical with  $m = 1$  or  $2$ ,

or finally an A6 radical



in which  $\text{R}^{44}$  represents a hydrogen atom, the OH group or an alkyl or alkoxy radical;

15  $\text{X}_a$  represents  $\text{-(CH}_2\text{)}_n\text{-}$ ,  $\text{-(CH}_2\text{)}_n\text{-CO-}$ ,  $\text{-N(R}^{45}\text{)-CO-(CH}_2\text{)}_n\text{-CO-}$ ,  $\text{-N(R}^{45}\text{)-CO-D-CO-}$ ,  $\text{-CO-N(R}^{45}\text{)-D-CO-}$ ,  $\text{-CO-D-CO-}$ ,  $\text{-CH=CH-(CH}_2\text{)}_n\text{-CO-}$ ,  $\text{-N(R}^{45}\text{)-(CH}_2\text{)}_n\text{-CO-}$ ,  $\text{-N(R}^{45}\text{)-CO-C(R}^{46}\text{R}^{47}\text{)-CO-}$ ,  $\text{-O-(CH}_2\text{)}_n\text{-CO-}$ ,  $\text{-N(R}^{45}\text{)-CO-NH-C(R}^{46}\text{R}^{47}\text{)-CO-}$ ,  $\text{-CO-N(R}^{45}\text{)-C(R}^{46}\text{R}^{47}\text{)-CO-}$ ,  $\text{-S-(CH}_2\text{)}_n\text{-CO-}$  or  $\text{-Z-CO-}$ ;

20 D represents a phenylene radical optionally substituted by one or more identical or different radicals chosen from alkyl, alkoxy, OH, nitro, halogen, cyano, or carboxyl optionally esterified by an alkyl radical;

Z represents a heterocycle,

$\text{R}^{45}$  represents a hydrogen atom or an alkyl radical,

25  $\text{R}^{46}$  and  $\text{R}^{47}$  represent, independently, a hydrogen atom, an alkyl, aryl or aralkyl radical the alkyl and aryl groups of which are optionally substituted by one or more identical or different substituents chosen from: the OH,  $\text{-SH}$ , halogen, nitro, alkyl, alkoxy, alkylthio,

aralkoxy, aryl-alkylthio,  $-NR^{48}R^{49}$  and carboxyl group optionally esterified by an alkyl radical;

$R^{48}$  and  $R^{49}$  represent, independently, a hydrogen atom, an alkyl radical or a  $-COR^{50}$  group, or  $R^{48}$  and  $R^{49}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

$R^{50}$  represents a hydrogen atom, an alkyl, alkoxy or  $-NR^{51}R^{52}$  radical,

$R^{51}$  and  $R^{52}$  represent, independently, a hydrogen atom or an alkyl radical, or  $R^{51}$  and  $R^{52}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle;

n being an integer comprised between 0 and 6;

$Y_a$  represents  $-(CH_2)_p-$ ,  $-C(R^{53}R^{54})-(CH_2)_p-$ ,  $-C(R^{53}R^{54})-CO-$ ;

$R^{53}$  and  $R^{54}$  represent, independently, a hydrogen atom, an alkyl radical, an aralkyl radical the aryl group of which is optionally substituted by one or more identical or different substituents chosen from: the OH group, halogen, nitro, alkyl, alkoxy,  $-NR^{55}R^{56}$ ,

$R^{55}$  and  $R^{56}$  represent, independently, a hydrogen atom, an alkyl radical or a  $-COR^{57}$  group, or  $R^{55}$  and  $R^{56}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle,

$R^{57}$  represents a hydrogen atom, an alkyl, alkoxy or  $-NR^{58}R^{59}$  radical,

$R^{58}$  and  $R^{59}$  represent, independently, a hydrogen atom or an alkyl radical, or  $R^{58}$  and  $R^{59}$  together with the nitrogen atom to which they are attached form an optionally substituted heterocycle;

p being an integer comprised between 0 and 6;

Het<sub>a</sub> represents a heterocycle,

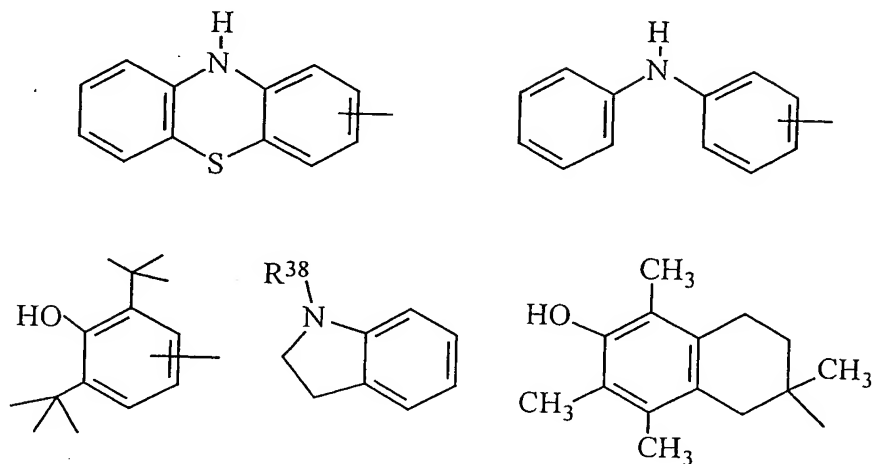
as well as addition salts with mineral and organic acids or with mineral and organic bases of said compounds of general formula (I),

for the preparation of medicaments for the treatment of pathologies where calpains and / or reactive oxygen species are involved.

13. Use of compounds of formula (I<sub>a</sub>) according to claim 12, for the preparation of medicaments for the treatment of pathologies involving reactive oxygen species.
14. Use of compounds of formula (I<sub>a</sub>) according to claim 12, for the preparation of medicaments for the treatment of pathologies involving reactive oxygen species and calpains.
15. Use of compounds of formula (I<sub>a</sub>) according to one of claims 12 to 14, for the preparation of medicaments for the treatment of pathologies of inflammatory and immunological diseases, cardiovascular and cerebrovascular diseases, disorders of the central or peripheral nervous system, osteoporosis, muscular dystrophies, proliferative diseases, cataracts, organ transplants, auto-immune and viral diseases, cancer, and all pathologies characterized by the excessive production of ROS's and / or activation of calpains.
16. Use of compounds of formula (I<sub>a</sub>) according to one of claims 12 to 15, characterized in that Het represents a monocyclic radical containing 1 to 2 heteroatoms chosen from O and N.
17. Use of compounds of formula (I<sub>a</sub>) according to one of claims 12 to 16, characterized in that Het represents tetrahydrofuran, dioxolane, pyrrolidine, 1,3-oxazolidine, and R<sup>1</sup> represents the hydrogen atom, the -OR<sup>3</sup> or oxo radical.
18. Use of compounds of formula (I<sub>a</sub>) according to one of claims 12 to 17, characterized in that X represents -(CH<sub>2</sub>)<sub>n</sub>-, -(CH<sub>2</sub>)<sub>n</sub>-CO-, -O-(CH<sub>2</sub>)<sub>n</sub>-CO-, -CO-N(R<sup>45</sup>)-D-CO-, -N(R<sup>45</sup>)-CO-(CH<sub>2</sub>)<sub>n</sub>-CO-, -N(R<sup>45</sup>)-CO-C(R<sup>46</sup>R<sup>47</sup>)-CO-, -N(R<sup>45</sup>)-CO-NH-C(R<sup>46</sup>R<sup>47</sup>)-CO-, -N(R<sup>45</sup>)-(CH<sub>2</sub>)<sub>n</sub>-CO-, -CO-N(R<sup>45</sup>)-C(R<sup>46</sup>R<sup>47</sup>)-CO or -Z-CO-.
19. Use of compounds of formula (I<sub>a</sub>) according to claim 18, characterized in that R<sup>45</sup> and R<sup>47</sup> represent the hydrogen atom, R<sup>46</sup> represents the hydrogen atom, an alkyl or phenyl radical, D represents the phenylene radical and Z represents the thiazole radical.
20. Use of compounds of formula (I<sub>a</sub>) according to one of claims 12 to 19, characterized in that R<sup>2</sup> represents a hydrogen atom or an aralkyl radical, and preferably benzyl.
21. Use of compounds of formula (I<sub>a</sub>) according to one of claims 12 to 20, characterized in that A represents either A1 with W representing the sulphur atom; or A'1; or A2 with R<sup>24</sup>, R<sup>25</sup> and R<sup>26</sup> which represent, independently, a hydrogen or an alkyl radical and Q which represents -OR<sup>33</sup>; or A3 with T representing the -(CH<sub>2</sub>)<sub>2</sub>- radical; or A4 with T representing the -(CH<sub>2</sub>)- radical,



22. Use of compounds of formula (I<sub>a</sub>) according to one of claims 12 to 21, characterized in that A represents a radical chosen from



23. Use of compounds of formula (I<sub>a</sub>) according to one of claims 12 to 22, characterized in that they correspond to one of the following formulae:

- 5 (2*R*)-6-hydroxy-*N*-[(3*S*)-2-hydroxytetrahydro-3-furanyl]-2,5,7,8-tetramethyl-3,4-dihydro-2*H*-chromene-2-carboxamide;  
*N*-1-(4-anilinophenyl)-*N*-4-[(3*S*)-2-hydroxytetrahydro-3-furanyl] succinamide;  
(3*S*)-3-{{[4-(4-anilinoanilino)-4-oxobutanoyl]amino} tetrahydro-2-furanyl acetate;  
*N*-1-(4-anilinophenyl)-*N*-4-[(1*S*)-1-(1,3-dioxolan-2-yl)-3-methylbutyl] succinamide;
- 10 *N*-1-(4-anilinophenyl)-*N*-3-[(3*S*)-2-hydroxytetrahydro-3-furanyl]-2-phenylmalonamide;  
3-(4-anilinoanilino)tetrahydro-2-furanol;  
*N*-[(1*S*)-1-({[(3*S*)-2-hydroxytetrahydro-3-furanyl]amino} carbonyl)-3-methylbutyl]-10*H*-phenothiazine-2-carboxamide;
- 15 (3*S*)-3-({(2*S*)-4-methyl-2-[(10*H*-phenothiazin-2-yl)carbonyl]-amino]pentanoyl} amino)tetrahydro-2-furanyl acetate;  
*N*-[(3*S*)-2-hydroxytetrahydro-3-furanyl]-2-(10*H*-phenothiazin-2-yl)-1,3-thiazol-4-carboxamide;  
*N*-[4-({[(3*S*)-2-hydroxytetrahydro-3-furanyl]amino} carbonyl)phenyl]-10*H*-phenothiazine-2-carboxamide;

- N-[(1S)-1-({[(3S)-2-hydroxytetrahydro-3-furanyl]amino}carbonyl)-3-methylbutyl]-10*H*-phenothiazine-1-carboxamide;
- (3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl)amino]pentanoyl}amino)tetrahydro-2-furanyl pivalate;
- 5 (3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl) amino]pentanoyl}amino)tetrahydro-2-furanyl 3,3-dimethylbutanoate;
- (3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl)amino]pentanoyl}amino)tetrahydro-2-furanyl benzoate;
- 10 (3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl)amino]pentanoyl}amino)tetrahydro-2-furanyl phenylacetate;
- (3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl)amino]pentanoyl}amino)tetrahydro-2-furanyl (2*S*)-2-(dimethylamino)-3-phenylpropanoate;
- (3S)-3-({(2S)-4-methyl-2-[(10*H*-phenothiazin-2-ylcarbonyl) amino]pentanoyl}amino)tetrahydro-2-furanyl 4-morpholinecarboxylate ;
- 15 N-[(1S)-3-methyl-1-[(3-oxo-1-pyrrolidinyl)carbonyl]butyl]-10*H*-phenothiazine-2-carboxamide;
- 2-(3,5-di-*tert*-butyl-4-hydroxyphenoxy)-N-[(3S)-2-hydroxytetrahydro-3-furanyl]acetamide;
- 20 N<sup>1</sup>-[(3S)-2-hydroxytetrahydro-3-furanyl]-2-phenyl-N<sup>3</sup>-(1-propyl-2,3-dihydro-1*H*-indol-5-yl)malonamide;
- N-(2-anilinophenyl)-N'-[(3S)-2-hydroxytetrahydro-3-furanyl]urea;
- N<sup>1</sup>-[(3S)-2-hydroxytetrahydro-3-furanyl]-N<sup>2</sup>-(1-propyl-2,3-dihydro-1*H*-indol-5-yl)ethanediamide;
- 25 (2*R*)-N-[(1S)-1-(1,3-dioxolan-2-yl)-2-phenylethyl]-6-hydroxy-2,5,7,8-tetramethyl-3,4-dihydro-2*H*-chromene-2-carboxamide;
- N-[(3S)-2-hydroxytetrahydro-3-furanyl]-5-indolinecarboxamide.

24. As industrial products, the compounds corresponding to one of the following formulae:

- N-1-(4-anilinophenyl)-N-4-[(3S)-2-oxotetrahydro-3-furanyl]succinamide;  
methyl (2S)-2-{[4-(4-anilinoanilino)-4-oxobutanoyl]amino}-4-methylpentanoate;  
N-1-(4-anilinophenyl)-N-4-[(1S)-1-formyl-3-methylbutyl]succinamide;  
benzyl 3-(4-anilinoanilino)-3-oxo-2-phenylpropanoate;  
5 3-(4-anilinoanilino)-3-oxo-2-phenylpropanoic acid;  
N-1-(4-anilinophenyl)-N-3-[(3S)-2-oxotetrahydro-3-furanyl]-2-phenylmalonamide;  
3-(4-anilinoanilino)dihydro-2(3H)-furanone;  
methyl (2S)-4-methyl-2-[(10H-phenothiazin-2-ylcarbonyl)amino]pentanoate;  
(2S)-4-methyl-2-[(10H-phenothiazin-2-ylcarbonyl)amino]pentanoic acid;  
10 N-[(1S)-3-methyl-1-({[(3S)-2-oxotetrahydro-3-furanyl]amino}carbonyl)butyl]-  
10H-phenothiazine-2-carboxamide;  
ethyl 2-(10H-phenothiazin-2-yl)-1,3-thiazol-4-carboxylate;  
2-(10H-phenothiazin-2-yl)-1,3-thiazol-4-carboxylic acid;  
N-[(3S)-2-oxotetrahydro-3-furanyl]-2-(10H-phenothiazin-2-yl)-1,3-thiazol-4-  
15 carboxamide;  
methyl 4-[(10H-phenothiazin-2-ylcarbonyl)amino]benzoate;  
4-[(10H-phenothiazin-2-ylcarbonyl)amino]benzoic acid;  
N-[4-({[(3S)-2-oxotetrahydro-3-furanyl]amino}carbonyl)phenyl]-10H-  
phenothiazine-2-carboxamide;  
20 methyl (2S)-4-methyl-2-[(10H-phenothiazin-1-ylcarbonyl)amino]pentanoate;  
(2S)-4-methyl-2-[(10H-phenothiazin-1-ylcarbonyl)amino]pentanoic acid;  
N-[(1S)-1-({[(3S)-2-oxotetrahydro-3-furanyl]amino}carbonyl)-3-methylbutyl]-  
10H-phenothiazine-1-carboxamide;  
25 N-[(1S)-1-(1,4-dioxo-7-azaspiro[4.4]non-7-ylcarbonyl)-3-methylbutyl]-10H-  
phenothiazine-2-carboxamide;

2-(3,5-di-*tert*-butyl-4-hydroxyphenoxy)-*N*-[(3*S*)-2-oxotetrahydro-3-furanyl]  
acetamide

5-nitro-1-propylindoline;

1-propyl-2,3-dihydro-1*H*-indol-5-ylamine;

5 3-oxo-2-phenyl-*N*-(1-propyl-2,3-dihydro-1*H*-indol-5-yl)-beta-alanine;

*N*<sup>1</sup>-[(3*S*)-2-oxotetrahydro-3-furanyl]-2-phenyl-*N*<sup>3</sup>-(1-propyl-2,3-dihydro-1*H*-indol-  
5-yl)malonamide;

*N*-(2-anilinophenyl)-*N'*-[(3*S*)-2-oxotetrahydro-3-furanyl]urea;

ethyl oxo[(1-propyl-2,3-dihydro-1*H*-indol-5-yl)amino] acetate;

10 oxo[(1-propyl-2,3-dihydro-1*H*-indol-5-yl)amino]acetic acid;

methyl (2*S*)-2-({[(2*R*)-6-hydroxy-2,5,7,8-tetramethyl-3,4-dihydro-2*H*-chromen-2-  
yl]carbonyl}amino)-3-phenylpropanoate;

(2*R*)-*N*-[(1*S*)-1-benzyl-2-oxoethyl]-6-hydroxy-2,5,7,8-tetramethyl-3,4-dihydro-2*H*-  
chromene-2-carboxamide;

15 *tert*-butyl 5-methyl 1,5-indolinedicarboxylate;

1-(*tert*-butoxycarbonyl)-5-indolinecarboxylic acid;

*tert*-butyl 5-({[(3*S*)-2-oxotetrahydro-3-furanyl]amino}carbonyl)-1-indoline  
carboxylate;

20 *tert*-butyl 5-({[(3*S*)-2-hydroxytetrahydro-3-furanyl]amino}carbonyl)-1-indoline  
carboxylate.